Reye Syndrome

1) THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent

Reye syndrome itself is not an infection; however, it most commonly occurs in children who are recovering from influenza (especially influenza B) or chickenpox and have taken aspirin or aspirin-containing products during their viral illness.

B. Clinical Description

Reye syndrome is a rare, acute and potentially life threatening condition. It affects primarily the central nervous system (causing an acute, non-inflammatory encephalopathy) and liver (causing elevations in ammonia levels and liver enzymes but no jaundice). It usually begins abruptly with vomiting and lethargy during the recovery period of a viral illness. The patient may develop confusion and changes in mental function, and might eventually become delirious. As the syndrome progresses, breathing may become sluggish and seizures, coma and death may occur. The case-fatality rate for Reye syndrome may be as high as 10 to 40%.

C. Modes of Transmission

Reye syndrome is not transmissible.

D. Incubation Period

Reye syndrome usually appears 5 to 7 days after the start of a viral illness.

E. Period of Communicability or Infectious Period

Reye syndrome is not communicable from person-to-person.

F. Epidemiology

Children between the ages of 5 and 16 years are most commonly reported with Reye syndrome. Illness is most common during the winter months when numerous viral illnesses are circulating. Epidemics of Reye syndrome parallel epidemics of influenza, especially influenza B.

2) REPORTING CRITERIA AND LABORATORY TESTING SERVICES

A. What to Report to the Massachusetts Department of Public Health

- Reye syndrome diagnosed by a healthcare provider based on clinical symptoms.

Note: See Section 3) C below for information on how to report a case.

B. Laboratory Testing Services Available

The diagnosis of Reye syndrome is not based on any laboratory test results.

3) DISEASE REPORTING AND CASE INVESTIGATION

A. Purpose of Surveillance and Reporting

- To identify contributing factors. Reye syndrome is a disorder that involves a viral infection with a cofactor. Through surveillance, other potential causes of the condition may be identified.

- To determine if there is a genetic predisposition for Reye syndrome.
- To determine if prior illness with Reye syndrome is correlated with other illness or disease process.

B. Laboratory and Healthcare Provider Reporting Requirements

Refer to the lists of reportable diseases (at the end of this manual's Introduction) for information.

C. Local Board of Health Reporting and Follow-Up Responsibilities

1. **Reporting Requirements**

Massachusetts Department of Public Health (MDPH) regulations (*105 CMR 300.000*) stipulate that each local board of health (LBOH) must report the occurrence of any case of Reye syndrome, as defined by the reporting criteria in Section 2) A above. Current requirements are that cases be reported to the MDPH Division of Epidemiology and Immunization, Surveillance Program using an official CDC *Reye Syndrome Case Investigation Report* form (in Appendix A). Refer to the *Local Board of Health Reporting Timeline* (at the end of this manual's introductory section) for information on prioritization and timeliness requirements of reporting and case investigation.

2. **Case Investigation**

a. It is the LBOH responsibility to complete a CDC *Reye Syndrome Case Investigation Report* form (in Appendix A) by interviewing the case and others who may be able to provide pertinent information. Much of the information required on the form can be obtained from the case's healthcare provider or the medical record.

b. Use the following guidelines to assist you in completing the form:
   1) Accurately record the demographic information, hospitalization information (and associated dates), date of symptom onset, and outcome of disease. (Please include a full name and address for the case.)
   2) Provide information about antecedent (previous) illnesses during the 3 weeks prior to onset of Reye syndrome.
   3) Provide information about symptoms and any vaccinations received during the month prior to onset of Reye syndrome.
   4) Complete the "Laboratory Data" section. This information is important in defining a case. You may ask the healthcare provider to submit a copy of the medical record to you or enlist his/her aid in completing these sections of the case report form.
   5) If you have made several attempts to obtain case information, but have been unsuccessful (*e.g.,* the case or healthcare provider does not return your calls or respond to a letter, or the case refuses to divulge information or is too ill to be interviewed), please fill out the form with as much information as you have gathered. Please note on the form the reason why it could not be filled out completely.

c. After completing the form, attach lab report(s) and mail (in an envelope marked "Confidential") to the MDPH Division of Epidemiology and Immunization, Surveillance Program. The mailing address is:

MDPH, Division of Epidemiology and Immunization
Surveillance Program, Room 241
305 South Street
Jamaica Plain, MA 02130
Note: Do not send the form to the CDC as it indicates.

4) CONTROLLING FURTHER SPREAD

A. Isolation and Quarantine Requirements (*105 CMR 300.200*)

None.

B. Protection of Contacts of a Case

None.

C. Managing Special Situations

Reported Incidence Is Higher than Usual/Outbreak Suspected

If there are reported cases of Reye syndrome in your city/town, or if you suspect an outbreak, investigate any clustered cases in an area or institution to determine common factors. Consult with the epidemiologist on-call at the Division of Epidemiology and Immunization at (617) 983-6800 or (888) 658-2850. The Division can help determine a course of action to prevent further cases and can perform surveillance for cases that may cross several town lines and therefore be difficult to identify at a local level.

D. Preventive Measures

- Never give infants, children or teenagers aspirin or aspirin-containing drugs for viral illnesses. For management of fever, use acetaminophen (*e.g.*, Tylenol®) or ibuprofen (*e.g.*, Motrin®).
- Consult with a medical provider immediately if children recovering from a viral illness suddenly develop nausea, vomiting or confusion.
- Reinforce routine vaccination to protect against influenza and varicella.

ADDITIONAL INFORMATION

There is no formal Centers for Disease Control and Prevention (CDC) surveillance case definition for Reye syndrome. (CDC case definitions are used by the state health department and CDC to maintain uniform standards for national reporting.) When reporting to the MDPH, always refer to the criteria in Section 2) A.

REFERENCES

American Academy of Pediatrics. *1997 Red Book: Report of the Committee on Infectious Diseases, 24th Edition*. Illinois, American Academy of Pediatrics, 1997.

CDC. Surgeon General's Advisory on the Use of Salicylates and Reye Syndrome, *MMWR*. 1982; 31:22, pp. 289–290.

Chin, J., ed., *Control of Communicable Diseases Manual, 17th Edition*. Washington, DC, American Public Health Association, 2000.

MDPH. *Regulation 105 CMR 300.000: Reportable Diseases and Isolation and Quarantine Requirements,* MDPH, Promulgated November 1998, (Printed July 1999).